

REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 1, 3, and 7-8 remain in the application. Claims 1 and 7 have been amended. Claims 2 and 4-6 have been cancelled.

In item 1 on pages 4-5 of the above-mentioned Office action, claims 1 and 3 have been rejected as being anticipated by Ahmad (US Pat. No. 6,037,639) under 35 U.S.C. § 102(e).

In item 3 on page 6 of the above-mentioned Office action, claim 4 has been rejected as being unpatentable over Ahmad in view of Sun et al. (US Pat. No. 5,612,249) under 35 U.S.C. § 103(a).

In item 4 on page 7 of the above-mentioned Office action, claim 7 has been rejected as being unpatentable over Ahmad and Sun et al. and further in view of Krautschneider (US Pat. No. 5,854,500) under 35 U.S.C. § 103(a).

In item 5 on pages 8-9 of the above-mentioned Office action, claim 8 has been rejected as being unpatentable over Ahmad in view of Krautschneider under 35 U.S.C. § 103(a).

The rejections have been noted and claim 1 has been amended in an effort to even more clearly define the invention of the instant application. Support for the changes is found in original claim 4.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, inter alia:

a gate disposed on said gate oxide over an area between said first conductive region and said second conductive region and having side walls adjacent respective ones of said conductive regions, said gate including a tungsten silicide layer and a polysilicon layer;

a silicon oxide passivation layer disposed on said side walls of said gate; and

an insulating silicon nitride spacer disposed on said silicon oxide passivation layer, said spacer acting as an oxidation barrier.

First of all, Applicants do not agree with the Examiner's argument (a) on page 2 of the Office action that there is no distinction between a spacer and a passivation layer. As already discussed in the response submitted June 18, 2004, the purpose and geometrical structure of a spacer and those of a passivation layer are substantially different. A person skilled in the art would not recognize the spacer 136 of Ahmad as a passivation layer.

It is, therefore, incorrect for the Examiner to identify a spacer as a passivation layer and a layer that present over the whole surface of the wafer as a spacer. According to the invention of the instant application, the passivation layer is disposed on the side walls of the gate and the spacer is disposed on the passivation layer, thus the spacer also only covers the side faces, not the whole surface of the component. The advantages of the features of claim 1 of the instant application, especially that the passivation layer is made of silicon oxide whereas the spacer is made of silicon nitride, have been discussed in detail in the response submitted June 18, 2004.

The additional feature of amended claim 1 of the instant application, namely the gate including a tungsten silicide layer and a polysilicon layer, is also not disclosed in Ahmad as confirmed by the Examiner in item 3 on page 6 of the Office action. However, the Examiner believes that this feature is obvious over Ahmad in view of Sun et al. The Examiner has stated that Ahmad discloses a gate including a polysilicon layer and a refractory metal silicide layer and Sun et al. disclose a tungsten silicide layer deposited on the polysilicon layer. More specifically, since tungsten is a refractory metal, the Examiner finds it obvious

"to select tungsten as the refractory metal for the refractory metal silicide layer by Ahmad in view of Sun et al. who teach ... the selection of tungsten (col. 8, l. 13-17) for its relatively low electrical resistivity as the refractory metal in the refractory metal silicide gate layer on top of the polysilicon gate layer 18. Motivation to select tungsten as the refractory metal stems from the enhanced conductivity of the gate line (cf. Col8, l. 13-17), thus reducing ohmic losses and response time." (Emphasis added).

It is agreed with the Examiner that tungsten is a well-known refractory metal providing enhanced conductivity properties. However, according to column 3, lines 34-35 of Ahmad the layer 114 is

"an isolating refractory metal silicon or silicon oxide layer 114." (Emphasis added).

Clearly, Ahmad particularly points to the fact that an isolating refractory metal is to be chosen for the silicide. This isolating property of layer 114 is also supported by the alternatively proposed material "silicon oxide." However, it is well known in the art, and also evident from the Examiner's analysis cited above, that tungsten is a well-conductive refractory metal. Hence, a person skilled in the art would not have chosen tungsten as refractory metal for the refractory metal silicide as this would be contradictory to the teaching of Ahmad.

Clearly, none of the cited references shows "a gate disposed on said gate oxide over an area between said first conductive region and said second conductive region and having side walls adjacent respective ones of said conductive regions, said gate including a tungsten silicide layer and a polysilicon layer; a silicon oxide passivation layer disposed on said side walls of said gate; and an insulating silicon nitride spacer disposed on said silicon oxide passivation layer, said spacer acting as an oxidation barrier," as recited in claim 1 of the instant application.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since all of the dependent claims are dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1, 3, and 7-8 are solicited.

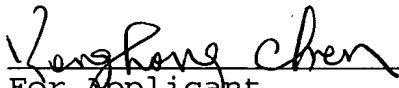
In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out. In the alternative, the entry of the amendment is requested as

it is believed to place the application in better condition for appeal, without requiring extension of the field of search. It is noted that the amendment to claim 1 does not raise new issues that would require further search because the added feature, which is from previous claim 4, has already been considered by the Examiner.

If an extension of time for this paper is required, petition for extension is herewith made. Please charge any fees which might be due with respect to 37 CFR Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

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For Applicant

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